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Two New Lysianassid Species (Amphipoda, Gammaridea) from Coastal Waters of West Sakhalin, Sea of Japan

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Abstract Two new amphipod species of the family Lysianassidae *Orchomene gurjanovae* sp. nov. and *Orchomenella lukini* sp. nov. have been found from the Western Sakhalin shelf. *Orchomene gurjanovae* is similar to *O. minor* Bulycheva, 1952, *O. tschernyschevi* Brüggen, 1909 and *Orchomenella perdidio* Lowry and Stoddart, 1997 in having a notched telson; but it differs from the other species by the high flat dorsal keel on the first urosomite. *Orchomenella lukini* is closely related to *O. pacifica* Gurjanova, 1938, *O. japonica* Gurjanova, 1962, and *O. thomasi* Lowry and Stoddart, 1997 by having the keeled urosomite 1 and basis of pereopod 7; but differs from them by the shape of notch on the basis of pereopod 7 and the transverse palmar margin of the article 6 of gnathopod 1.

Key words: Amphipoda, *Orchomene*, *Orchomenella*, new species, Sea of Japan

Introduction

Institute of Marine Biology of the Far East Branch of the Russian Academy of Sciences carried out a series of expeditions to the Western Sakhalin shelf during 1976–1978. Research staff conducted sampling of benthos by diving and dredge at a series of stations located at depths ranging from 2 to 350 m and on a variety of bottom types. These collections contained 61 species of lysianassid amphipods, including some new species in several genera. In the present paper I describe new species *Orchomene* and *Orchomenella*. The distribution of these two species is also shown (Fig. 1). The type specimens are deposited in the Institute of Marine Biology of the Russian Academy of Sciences, Vladivostok.

Description

Orchomene gurjanovae sp. nov.

(Figs. 2–5)

Material examined

Type series. Holotype-female, 5.2 mm (No. 1/19449), Sakhalin I., Cape Vindis, st. 229, sample 1240, 5 m depth, (substrate: sand), Sept. 1978, V. I. Fadeev coll.

Paratypes (No. 2/19450) – 31 females, 4.2–5.2 mm, 293 juv., 2.0–4.2 mm, Sakhalin I., Cape Vindis, st. 229, sample 1240; 2 females, 4.5–4.6 mm, 35 juv., 2.0–4.4 mm, Sakhalin I., Cape Vindis, st. 229, sample 1239, 5 m depth, (sand), Sept. 1978; 5 females, 4.4–5.5 mm, 70 juv., 2.5–4.2 mm, Sakhalin I., Cape Vindis, st. 229, sample 1241, 5 m depth, (sand), Sept. 1978; 1 juv., 3.3 mm, Sakhalin I., Cape Vindis, st. 227, sample 1231, 15 m depth, (piled boulders), Sept. 1978; 1 juv., 4.0 mm, Sakhalin I., Cape Vindis, st. 230, sample 1249, 15 m depth, (rocky platform), Sept. 1978; 1 juv., 3.7 mm, Sakhalin I., Kuznetsov Cape, st. 226, sample 1227, 20 m depth, (sand), Sept. 1978; 1 female, 4.2 mm, 15 juv., 3.3–4.2 mm, Sakhalin I., off Mt. Pritochnaya, st. 55, sample 342, 5 m depth, (sand), Aug. 1977, V. I. Fadeev coll.; 15 juv., 3.3–4.2 mm, Sakhalin I., off Mt. Pritochnaya, st. 55, sample 343, (sand), Aug. 1977, V. I. Fadeev coll.; 20 juv., 2.9–4.2 mm, Sakhalin I., off Mt. Pritochnaya, st. 55, sample 344, 5 m depth, (sand), Aug. 1977, V. I. Fadeev coll.; 1 female, 4.5 mm, Sakhalin I.,

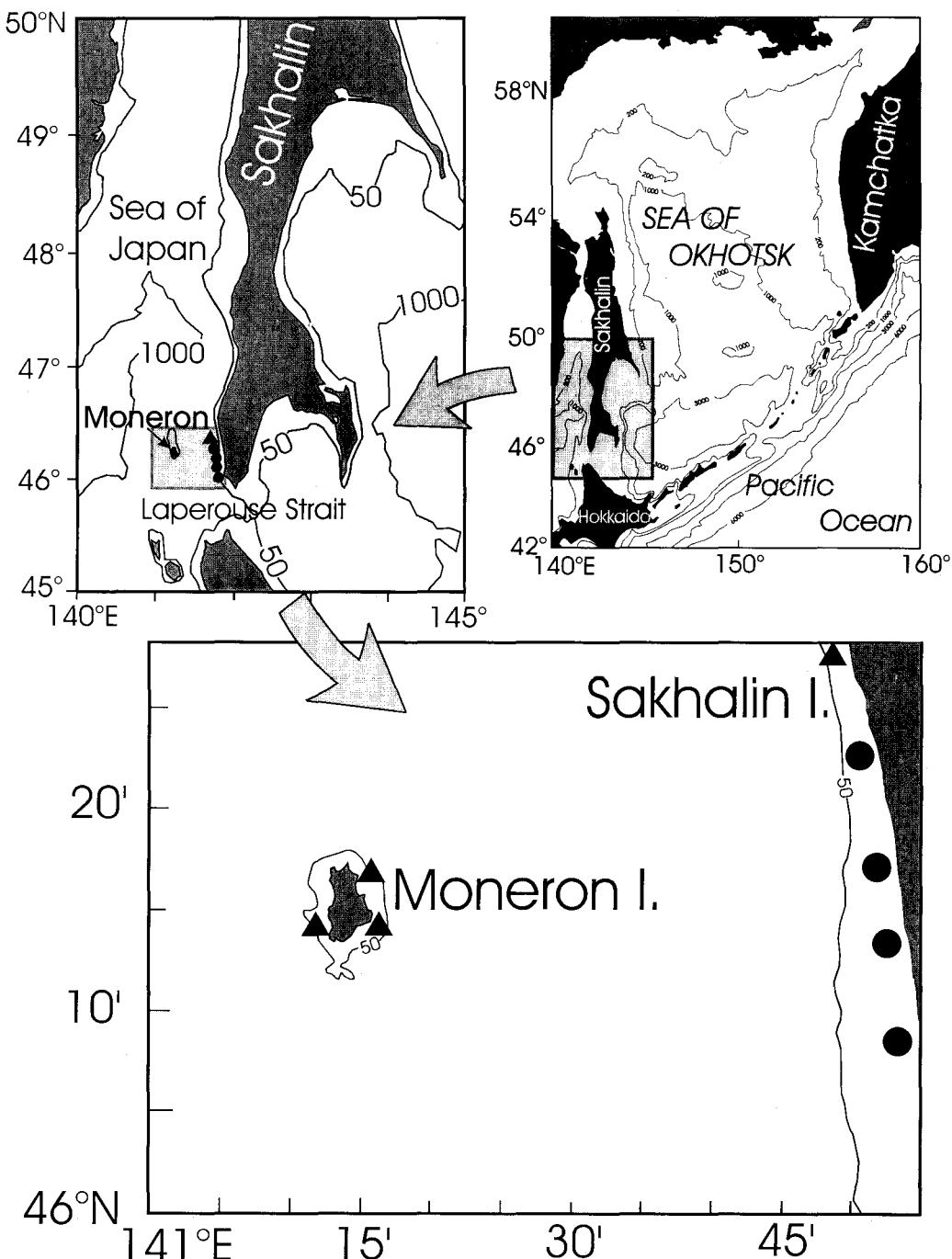


Fig. 1. Distribution of two new species of amphipods: circle-*Orchomenella gurjanovae* sp. nov., triangle-*Orchomenella lukini* sp. nov.

off Mt. Pritochnaya, st. 55, sample 345, 5 m depth, (sand), Aug. 1977, V. I. Fadeev coll.; 1 ovigerous female (egg diameter 0.5 mm), 6.6 mm, 3 females, 4.7–5.5 mm, 22 juv., 3.5–4.2 mm, Sakhalin I., off Mt. Pritochnaya, st. 55, sample 346, 5 m depth, (sand), Aug. 1977, V. I. Fadeev coll.; 1 ovigerous female, 5.6 mm, 9 juv., 3.2–4.3 mm, Sakhalin I., off Mt. Pritochnaya, st. 55, sample 347, 5 m depth, (sand), Aug. 1977, V. I. Fadeev coll.; 1 female, 4.6 mm, 1 juv., 3.6 mm, Sakhalin I., off Mt. Pritochnaya, st. 55, sample 348, 5 m depth, (sand), Aug. 1977, V. I. Fadeev coll.; 1 female, 4.5 mm, 2 juv., 3.3–3.8 mm, Sakhalin I., off Village Pereputje, st. 117, sample 704, 10 m depth, (sand), Aug. 1977, V. I. Fadeev coll.; 1 juv., 3.3 mm, Sakhalin I., off Village Pereputje, st. 117, sample 705, 10 m depth, (sand), Aug. 1977, V. I. Fadeev coll.; 1 juv., 3.6 mm, Sakhalin I., off Village Pereputje, st. 117, sample 706, 10 m depth, (sand), Aug. 1977, V. I. Fadeev coll.

Males have not been detected throughout the type series.

Etymology

The species is named in memory of E. F. Gurjanova, the prominent carcinologist.

Description of the holotype (female, 5.2 mm long)

Body thick, compact, slightly inflated laterally. Eyes black, large, somewhat dilating ventrally. Lateral cephalic lobe circular, produced forward very little. Urosomite 1 with high flat keel.

Antennae 1 and 2 subequal in length, short, 1/6 of body length. Peduncular article 1 of antenna 1 with dorsal keel, 2.2 times as long as articles 2 and 3 combined. Article 2 1.8 times as long as article 3. Primary flagellum slightly shorter than peduncle, 9-articulate, without callynophore. Peduncular and flagellar articles trimmed with sparse short setae. Accessory flagellum long, reaching distal margin of article 6 of primary flagellum, 4-articulate, furnished with rows of long distal setae along outer margins. Peduncle of antenna 2 1.9 times as long as flagellum, first three articles lacking armament, articles 4 and 5 bearing very long setae distolaterally. Gland cone small. Peduncular articles 2 and 3 similar in length to each other, article 4 almost 2 times as long as article 5. Flagellum 8-articulate with thin setules. First flagellar article half as long as article 5.

Epistome not produced forward beyond labrum, circular from lateral view. Labrum with circular anterior margin. Labium lacking inner lobes, apex of outer lobe furnished with hardly visible excavation and trimmed with hairs.

Mandible with straight incisor and spine row of three spines. Molar weak, cylinder-shaped, without clear triturative area; palp attached below molar, 3-articulate, with

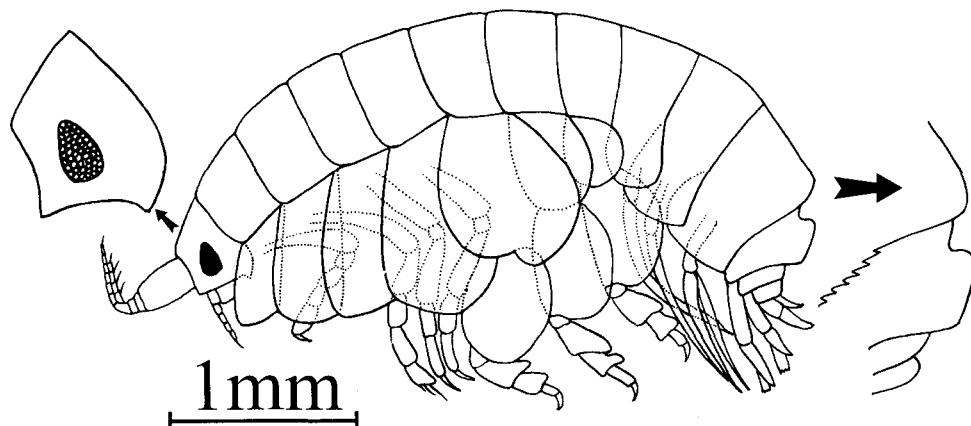


Fig. 2. *Orchomene gurjanovae* sp. nov. Holotype-female, 5.2 mm: habitus.

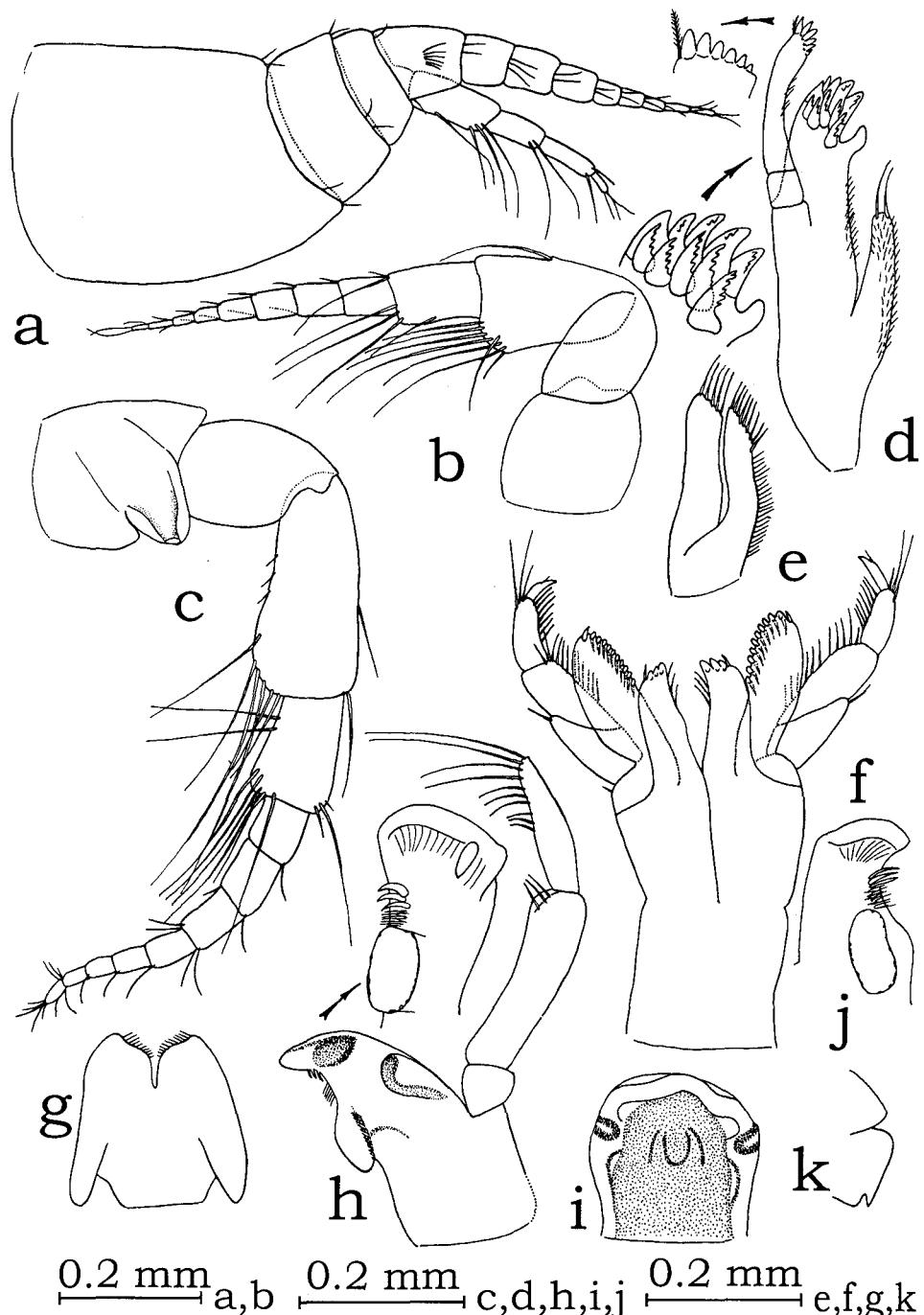


Fig. 3. *Orchomene gurjanovae* sp. nov. Holotype-female, 5.2 mm: a, b-antennae 1, 2 (outer side); e-maxilla 2; f-maxilliped; g-labium. Paratype-female, 5.2 mm: c-antenna 2 (inner side); d-maxilla 1; h-left mandible; i-labrum; j-right mandible; k-epistome and labrum (lateral view).

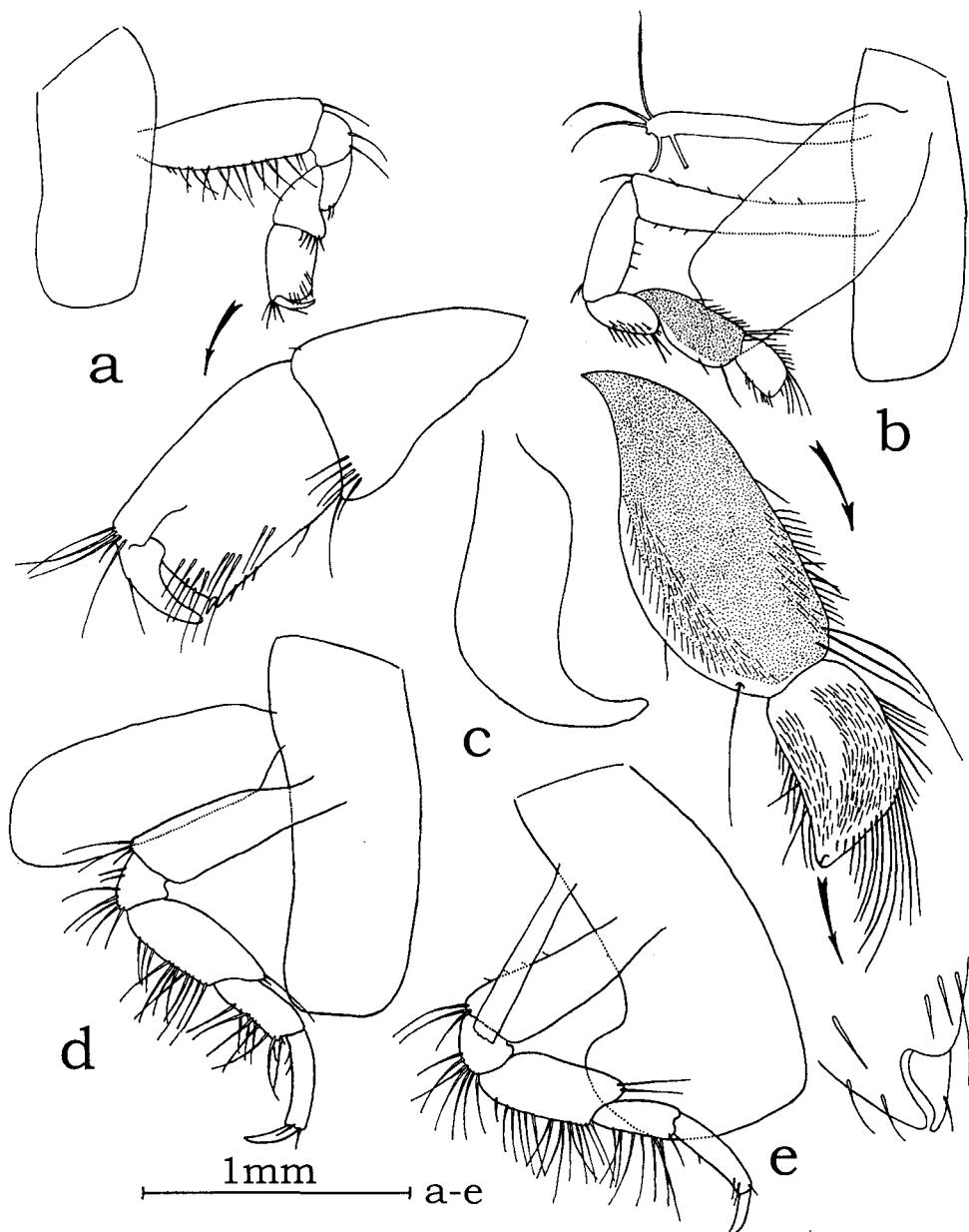


Fig. 4. *Orchomene gurjanovae* sp. nov. Holotype-female, 5.2 mm: a, b-gnathopods 1, 2; c-branchial vesicle on coxa 4; d, e-pereopods 3, 4.

setae on articles 2 and 3; apical setae exceeding length of article.

Maxilla 1 with biarticulate palp, furnished with 6 apical spines and several thin hairs along inner margin. Outer plate with 11 pectinate spines. Inner plate covered with thin hairs, bearing 2 apical setae.

Maxilla 2 with long setae on plate apices, hairs over inner margin of inner plate.

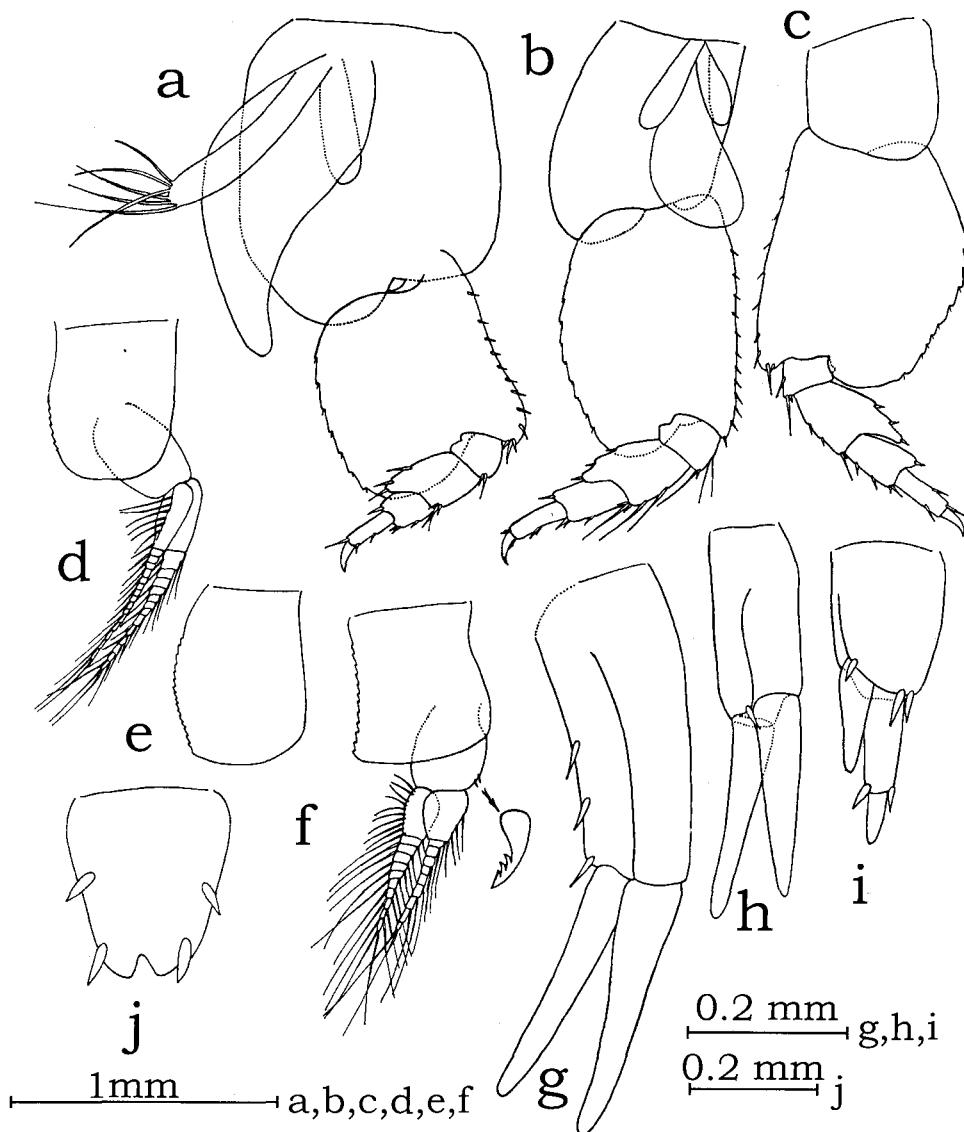


Fig. 5. *Orchomene gurjanovae* sp. nov. Holotype-female, 5.2 mm: a, b, c-pereopods 5, 6, 7; d, f-epimera and pleopods 1, 3; e-epimeron 2; g, h, i-uropods 1, 2, 3; j-telson.

Inner plate of maxilliped with oblique apex and slightly concave inner margin, bearing 3 thick spines, one seta on apex and 3 setae along inner margin. Outer plate with circular apex, reaching distal margin of palp article 2; inner margin furnished with blunt-edged spines, apicalmost spine pointed. Palp 4-articulate; article 4 dactyliform with thin seta on outer margin; article 3 with several long distal setae; shorter setae located along inner margin of articles 2 and 3; article 1 bearing distal seta.

Coxal plates increasing in size from 1 to 4, long, narrow; first three with parallel margins; fourth with excavation of 3/4 plate depth. Coxa 5 bilobate, depth equal to width in anterior portion; posterior lobe deeper than anterior one, circular. Coxa 6 extended in

depth, also bilobate; anterior lobe small, posterior one wider and deeper than anterior. Coxa 7 small, almost half as large as preceding one, posterior portion deeper than anterior, depth in medial portion equal to width, ventral margin oblique.

Branchial vesicles located on coxae 2–6, lacking folds, elongated, branchial vesicles 2–4 lacking accessory lobes, branchial vesicle 5 with accessory lobe, 6 with two accessory lobes. Anterior corners of branchial vesicles of coxae 4 and 5 highly pointed and stretched forward. Oostegites on coxae 2–5.

Gnathopod 1 small, robust, basis equal in length to subsequent articles combined, slightly dilating distally, furnished with long setae along anterior margin and one seta posterodistally. Article 5 equal in length to article 6, pyriform, lacking distal lobe, armed with several setae. Article 6 slightly tapering distally, with subparallel anterior and posterior margins, with tuft of long setae at anterior corner near dactyl and small groups of setae along posterior margin. Palm straight with one locking spine and long setae. Dactyl equal in length to palmar margin, with proximal seta on anterior margin.

Gnathopod 2 almost 1.4 times as long as gnathopod 1. Basis 2 times as long as article 3, with parallel margins, very short setae along anterior and posterior margins and one long posterodistal seta. Article 3 slightly longer than article 5, with three minute setae along anterior margin and 2 distal setae on posterior margin. Article 4 oval, nearly half as long as article 3, lined with short hairs and several long setae on posterior surface. Article 5 inflated without "pineapple pad"; anterior and posterior surfaces trimmed with thin hairs; several long setae on distal end. Article 6 short, half as long as article 5, with parallel anterior and posterior margins; inner surface almost entirely covered with thin hairs, margins trimmed with long thin setae; palmar corner stretched forward, forming small chela with hardly visible dactyl.

Pereopods 3 and 4 similar to each other (excluding coxal plates). Basis slightly dilating distally, with tuft of long setae posterodistally, equal in size to two subsequent articles combined. Article 3 short, half as long as article 4. Article 4 with stretched anterior corner bearing couple of long setae. Article 5 slightly shorter and nearly two times as wide as article 6. Articles 3 to 5 armed with long setae along posterior margin. Article 6 two times as long as article 7, furnished with some short distal and lateral setae. Dactyl pointed.

Pereopods 5–7 subequal in length. Basis of pereopod 5 wide with parallel margins, length slightly exceeding width, posterodistal angle forming broad short lobe, strong short spines located along anterior margin, posterior margin slightly serrated with very short thin hairs. Overall length of all subsequent articles equal to that of basis. Article 3 equal in length to article 5, with anterodistal setae. Article 4 wider and longer than preceding one, posterodistal angle stretched into pointed lobe; strong spines located along distal half of posterior margin and anterodistally. Articles 5 and 6 armed with spines anterodistally and posterodistally as well as in the middle of anterior margin. Article 6 0.5 times as wide as article 5 and 2 times as long as dactyl. Dactyls of pereopods 5–7 shorter than in pereopods 3 and 4.

Basis of pereopod 6 extended in length, with straight anterior and convex posterior margins, posterodistal angle stretched into small rounded lobe similar to pereopod 5, anterior margin armed with minute spines, posterior margin serrated. Article 3 of pereopod 6 half as long as article 4, both articles furnished with several long setae along anterior margin; some short spines located on posterior margin of article 4. Article 4 dilated, with posterodistal angle stretched into narrow pointed lobe. Articles 5 and 6 equal in length, article 5 narrower than article 4 and two times as wide as article 6; both articles furnished with spines postero- and anterodistally and along anterior margin. Dactyl half as long as article 6.

Basis of pereopod 7 wider than in pereopod 6, with straight anterior and convex posterior margins, posterodistal angle stretched into small rounded lobe, anterodistal angle forming small projection, posterior margin serrated, anterior margin furnished with thin short spinules, several stout spines situated anterodistally. The rest articles of pereopod 7 practically same in shape and size as in pereopod 6, except for articles 3 and 4 devoid of long setae and furnished with spines instead.

Epimera 1–3 long, epimera 2 and 3 equal in depth, epimeron 1 a little shallower. Posterior margins of three epimera differently serrated: epimeron 3 bearing denticles throughout posterior margin, epimeron 2 bearing denticles along distal 2/3 length, epimeron 1 bearing denticles confined to middle portion. Epimeron 1 slightly tapering distally, with anterior and posterior margins passing gently into ventral margin. Epimeron 2 with straight anterior margin gently rounding anterodistally; posterior margin convex, posterodistal angle blunt. Epimeron 3 slightly dilating distally with small excavation on anterior margin, circular anterodistally, ventral and posterior margins connected at straight angle, posterior margin slightly concave.

Pleopods 1–3 similar in structure, equally long, with long setae on both rami. Distal end of peduncle bearing serrated coupling spines.

Uropods 1–3 diminishing in size. Apex of ramus of uropod 3 on the same level with that of uropod 2, apex of ramus of uropod 1 slightly extended beyond uropods 1 and 2. Peduncle of uropod 1 slightly longer than rami, circular from ventral, slightly concave from dorsal, bearing two dorsal ridges, inner ridge bearing 3 spines, rami of uropod 1 equal in size to each other, smooth, lacking spines. Peduncle of uropod 2 half as long as uropod 1, as long as rami, bearing distal spine; rami smooth, lacking spines. Uropod 3 slightly shorter than peduncle of uropod 1, peduncle thick, tapering distally, with spines at conjunction of rami; outer ramus biarticulate, equal in length to peduncle, proximal article with 2 thick stout spines on distal end, distal article half as long as proximal one; inner ramus not reaching distal margin of proximal article of outer ramus, shorter than peduncle, smooth.

Telson long, tapering distally, with small apical notch of 1/8 telson length, armed with two pairs of very thick marginal spines.

Remarks

The new species differs fairly well from other species of this genus by the high flat dorsal keel on the urosomite 1 and the telson bearing a shallow apical notch. From *Orchomene minor* Bulycheva, 1952, described from the Sea of Japan, the new species differs in a variety of characters: circular lateral cephalic lobes less produced forward; the shape of eyes; epistome, not extending beyond labrum; broad apices of outer lobes of labium; shorter dactyls of gnathopods 1 and 2; the shape of basis of pereopod 5; the shape of epimeron 3; and the shape and armament of telson. From *Orchomene tschernyschevi* Brüggen, 1909, recorded from the Sea of Japan by Gurjanova (1951), the new species differs as follows: epistome not extending beyond labrum; the absence of posterodistal lobe on the article 5 of gnathopod 1; relative length of articles 5 and 6 of gnathopod 1; the article 6 of gnathopod 1 with parallel anterior and posterior margins and smooth palm; epimeron 3 serrated all over the posterior margin; and the shape and armament of telson.

Barnard (1969) reduced the genus *Orchomenella* Sars, 1895, along with some other genera, to a synonym of the genus *Orchomene* Boeck, 1871. De Broyer (1985) restored the validity of *Orchomenella*. Barnard and Ingram (1990) retained *Orchomenella* as a valid subgenus of *Orchomene*. Most recently, Barnard and Karaman (1991) organized the supergenus *Orchomene*, in which they included *Orchomene* and *Orchomenella* as valid genera, along with some other genera and subgenera. However, differences between the genera *Orchomene* and *Orchomenella*

are obscure.

I assigned the new species *Orchomene gurjanovae* to the genus *Orchomene* on the basis of the following characters: the telson is fused, having only a small apical notch; the posterior margins of epimera 1–3 are serrated; mandibular molar in the form of a comb bearing denticles; outer plate of maxilliped with 1 strong apical spine.

Though *Orchomene gurjanovae* sp. nov. is similar to *Orchomenella perdidio* Lowry and Stoddart, 1997, described from the Gulf of Mexico, in having a notched telson, but differs by the lack of callynophore, the armament of telson, the serrated epimera 1–3, the shape of the basis of pereopod 5, the shape of gnathopods 1 and 2, smooth rami of uropods 1–3 and other characters.

Orchomenella lukini sp. nov.

(Figs. 6–10)

Material examined

Type series. Holotype-female, 3.6 mm (No. 1/19451), Sakhalin I., Nayasi Cape, st. 115, sample 697, 40 m depth, (substrate: sand + shells), Aug. 1977, V. I. Fadeev coll. Paratypes (No. 2/19452) - female, 3.4 mm, Sakhalin I., Nayasi Cape, st. 115, sample 697; 3 females, 4.8–5.5 mm, Sakhalin I., Nayasi Cape, st. 115, sample 698, 40 m depth, (sand+shells), Aug. 1977, V. I. Fadeev coll.; 3 females, 3.3–4.2 mm, 1 male, 4.1 mm, Moneron I. (near Krasny I.), st. 19, sample 119, 17 m depth, (rock platform), July 1977, V. I. Fadeev coll.; 1 male, 4.0 mm, south-west off Moneron I., st. 24, sample 152, 10 m depth, (pebble + sand), July 1977, S. A. Rudenko coll.; 2 ovigerous females, 2.8–3.2 mm, Moneron I., Izo Bay, st. 38, sample 235, 37 m depth, (silty sand), July 1977, V. I. Fadeev coll.

Etymology

The species is named in memory of V. I. Lukin, a collaborator at the Institute of Marine Biology, a prominent investigator of the shelf of the Sea of Japan and Kurile Islands.

Description of the holotype (female, 3.6 mm long)

Body flattened laterally, robust, compact. Urosomite 1 with high pointed dorsodistal

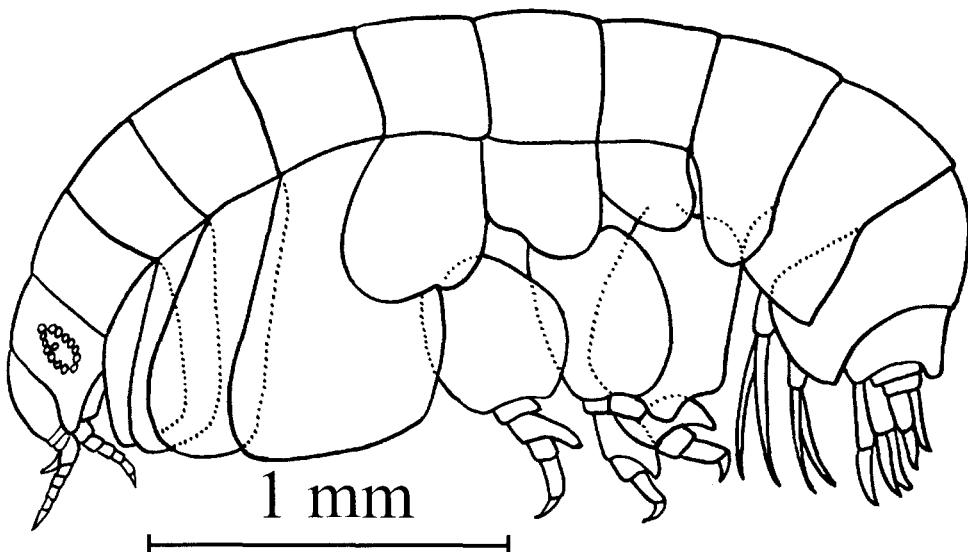


Fig. 6. *Orchomenella lukini* sp. nov. Holotype-female, 3.6 mm: habitus.

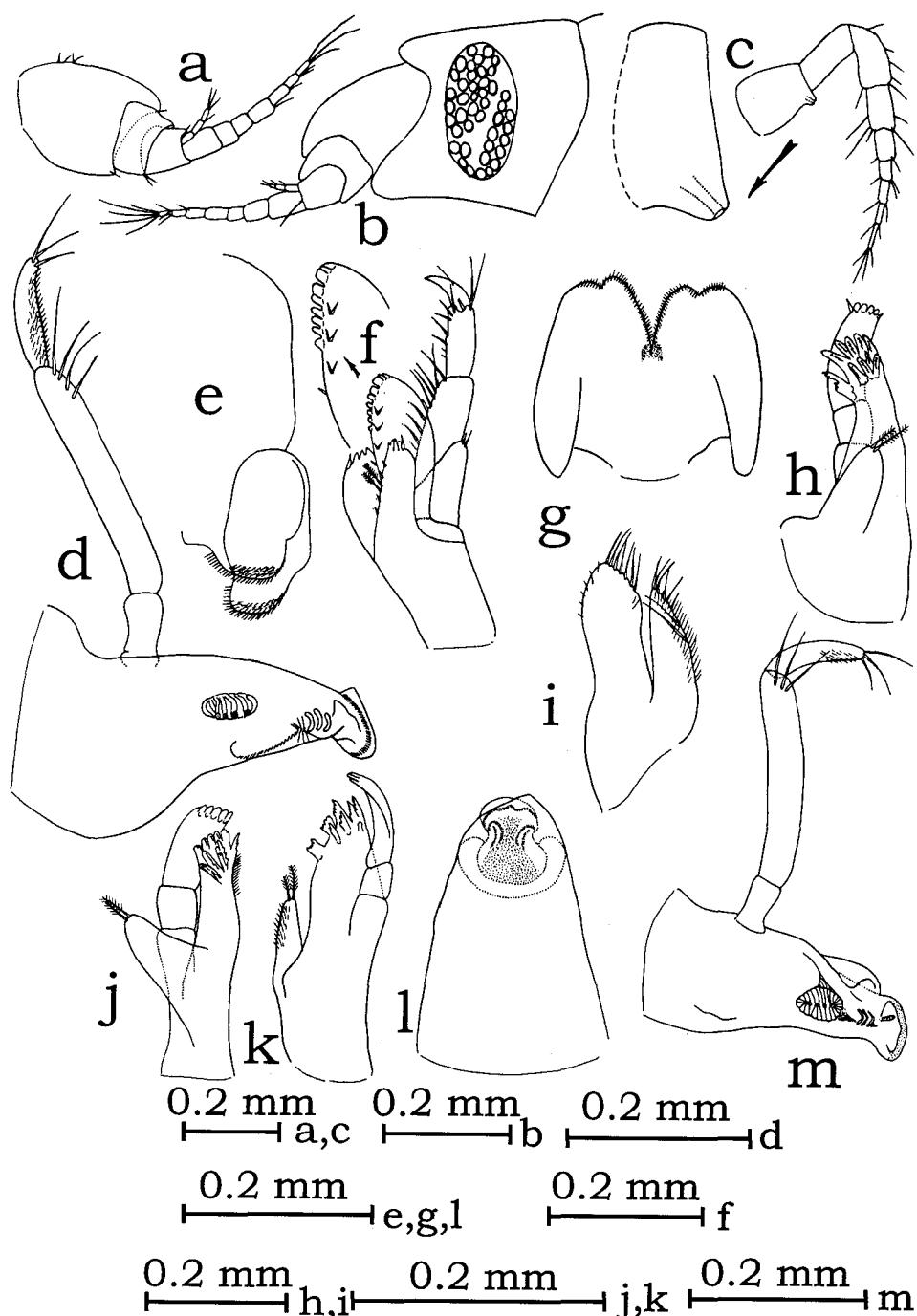


Fig. 7. *Orchomenella lukini* sp. nov. Holotype-female, 3.6 mm: a-antenna 1; b-cephalon and antenna 1; c-antenna 2; d-left mandible; e-epistome and labrum (lateral view); f-maxilliped; g-labium; h, i-maxillae 1, 2. Paratype-female, 3.4 mm: j, k-maxilla 1; l-labrum; m-left mandible.

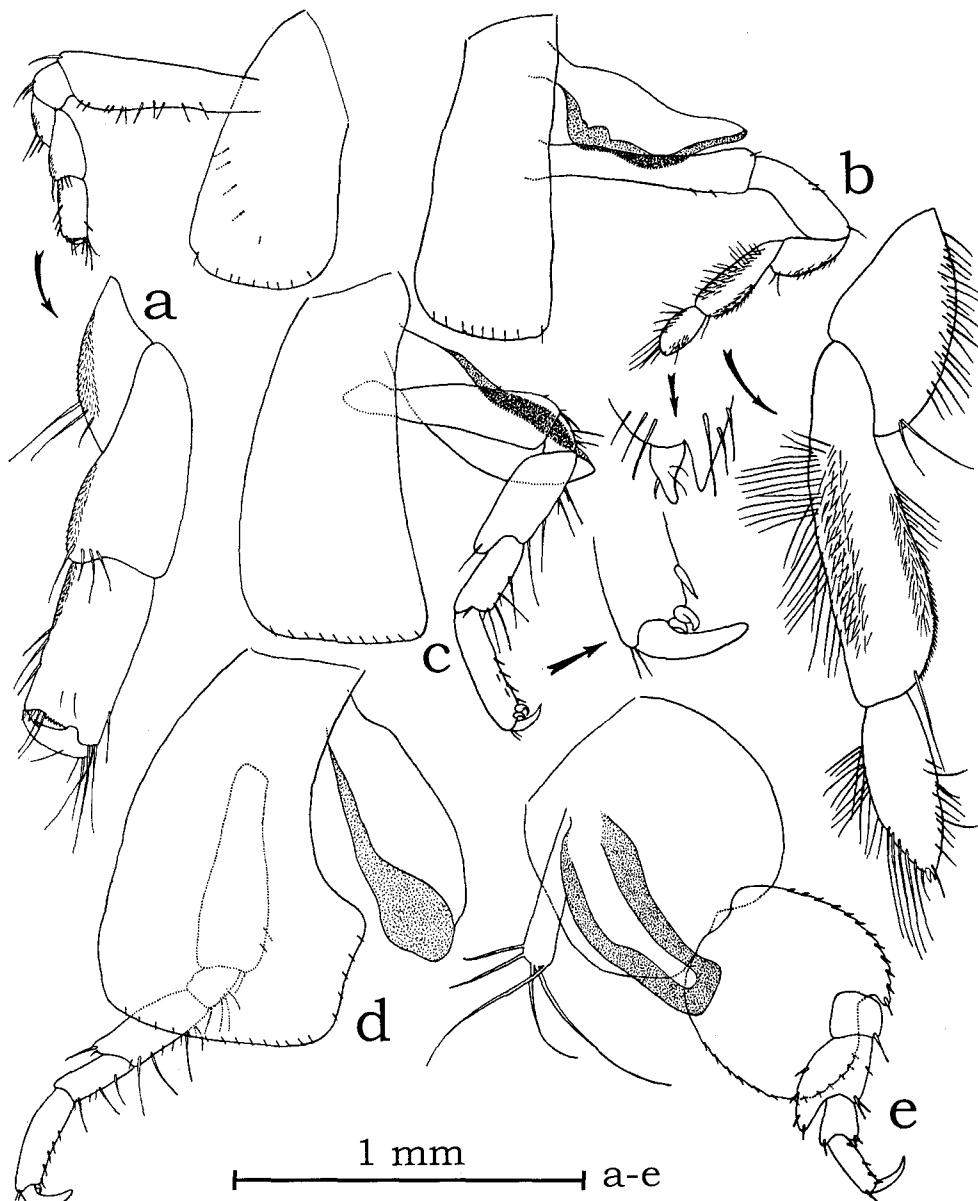


Fig. 8. *Orchomenella lukini* sp. nov. Holotype, female, 3.6 mm: a, b-gnathopods 1, 2; c, d, e-pereopods 3, 4, 5.

keel hanging over urosomite 2. Lateral cephalic lobe produced forward with blunt apex reaching distal end of peduncular article 1 of antenna 1. Eyes large, oval, consisting of large ommatidia pigmented dark brown.

Antennae 1 and 2 subequal in length, short, less than 1/6 of body length. Peduncular article 1 of antenna 1 inflated, with dorsal keel hanging over article 2, with setules on dorsal surface; article 1 longer than articles 2 and 3 combined. Articles 2 and 3 subequal

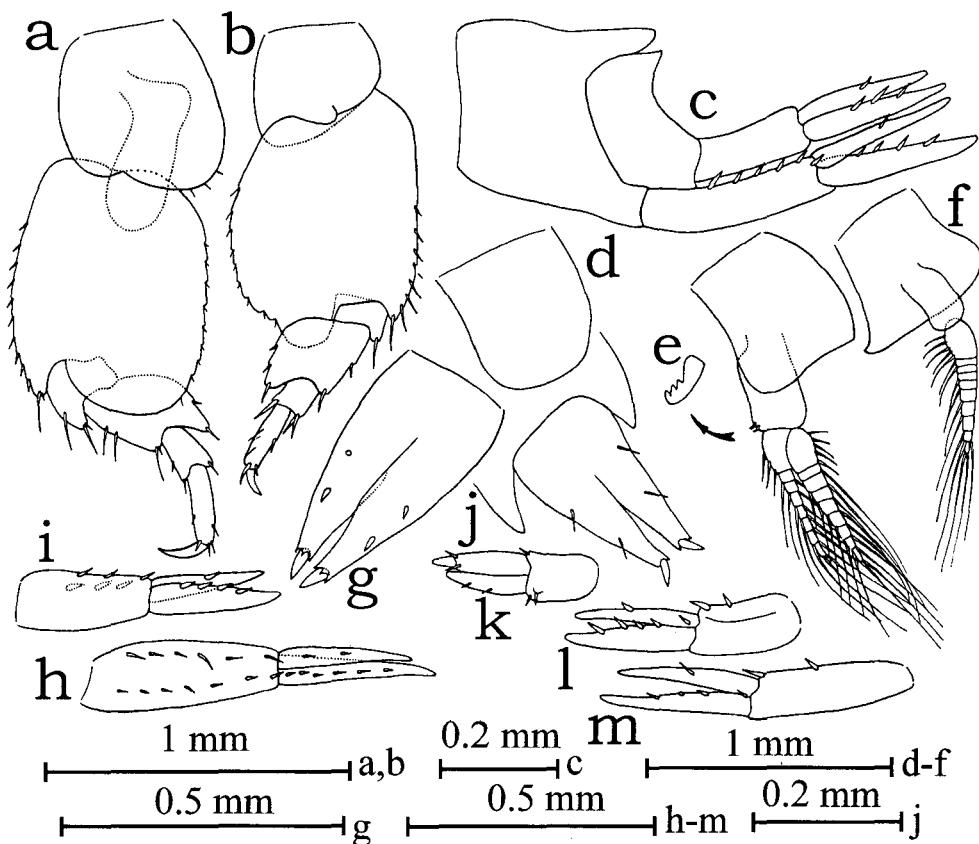


Fig. 9. *Orchomenella lukini* sp. nov. Holotype, female, 3.6 mm: a, b-pereopods 6, 7; c-urosomites 1, 2 with uropods 1, 2; d-left epimeron 1; e, f-left epimera and pleopods 2, 3; g-telson; h, i-uropods 1, 2. Paratype, female, 3.4 mm: j-telson, k, l, m-uropods 3, 2, 1.

in length. Primary flagellum slightly shorter than peduncle, 7-articulate, with setae on each article tip and with tuft of long setae on terminal article; flagellar article 1 slightly shorter than peduncular article 3 and equal to flagellar articles 2 and 3 combined. Accessory flagellum 3-articulate, slightly longer than article 1 of primary flagellum. Peduncle of antenna 2 2 times longer than flagellum; gland cone not high, obscure. Peduncular articles 3 and 4 subequal in length, peduncular article 5 slightly shorter than article 4. Flagellum 5-articulate, articles similar to the last 2 peduncular articles.

Epistome not produced beyond labrum. Labrum with rounded anterior margin. Labium devoid of inner lobes, apex of outer lobe slightly notched, lined with hairs.

Mandible with horse-shoe incisor, spine row of 3 spines and hairs. Molar cylindrical with rather distinct triturative area. Palp 3-articulate, attached proximally and behind molar, with long distal setae on article 2, with long apical setae and thin hairs on article 3.

Maxilla 1 with biarticulate palp having 5 blunt thick apical spines and one sharp spine. Inner plate with two long plumose apical setae and thin hairs along inner margin. Outer plate bearing 10 pectinate spines.

Maxilla 2 with long setae on apices of plates and thin hairs on inner surfaces.

Inner plate of maxilliped with pointed apex furnished with 3 thick and one thin spines; 4

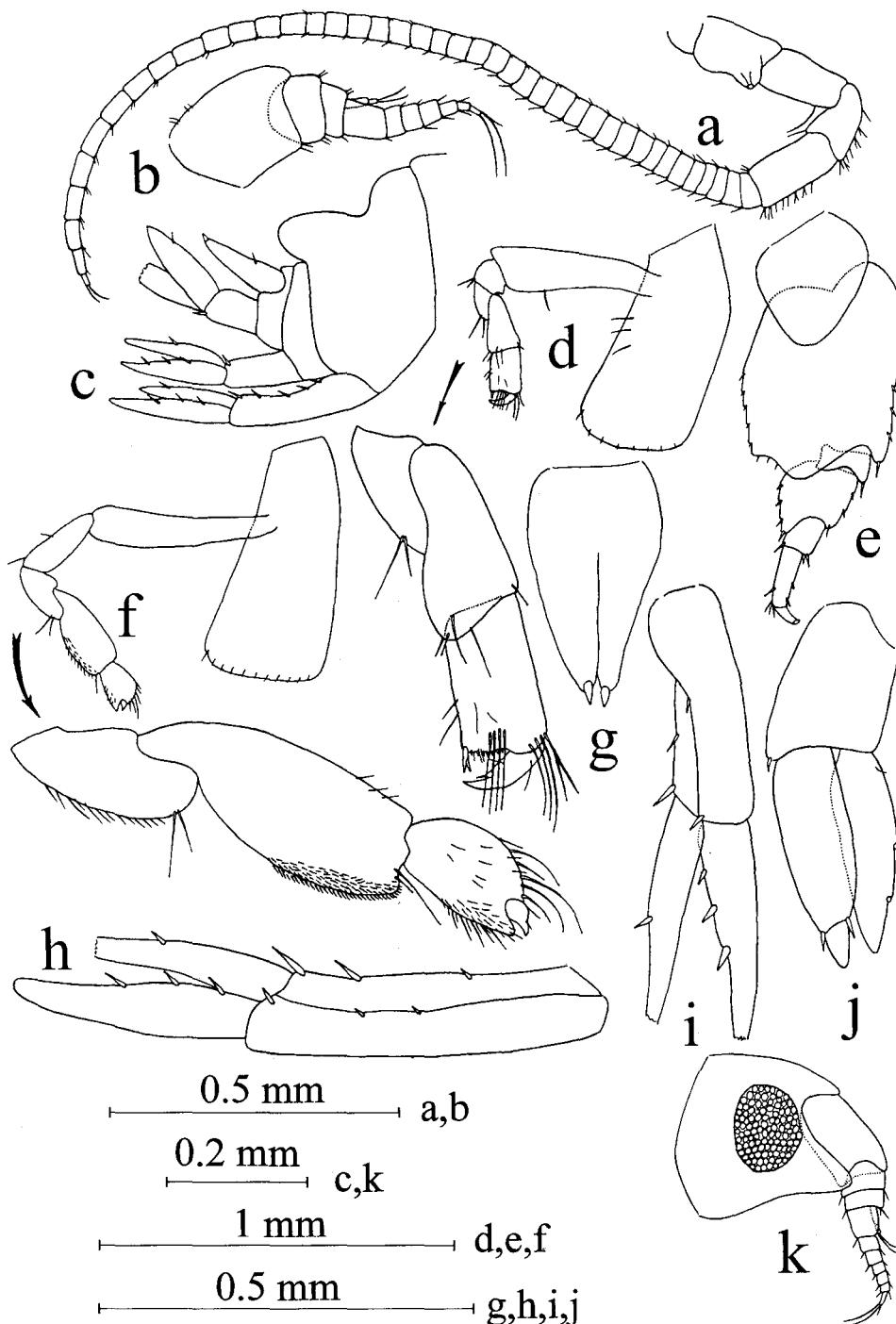


Fig. 10. *Orchomenella lukini* sp. nov. Paratype, male, 4.0 mm: a, b-antennae 2, 1; c-uosome with uropods and telson; d-gnathopod 1; e-pereopod 7; f-gnathopod 2; g-telson; h, i, j-uropods 1, 2, 3; k-cephalon and antenna 1.

spinules and 2 plumose setae situated along inner margin. Outer plate wide, reaching distal end of palp article 2, apex and distal half of inner margin serrated, one spinule located medially on inner margin; 3 pairs of spinules on dorsal face. Palp 4-articulate; article 1 bearing 2 setae at distal outer corner; articles 2 and 3 with long setae on inner margin; article 3 with distal setae; article 4 dactyliform, with thin seta in the middle of outer margin. Articles 1 and 3 subequal in length, article 2 1.5 times as long as article 1, article 4 0.7 times as long as article 3.

Coxal plates increasing in size from 1 to 4, their ventral margins bearing thin short hairs. Posterior portion of coxa 1 fully overlapped with coxa 2. First two plates bearing hardly noticeable notch posterodistally, accompanied with hair at base. First three plates dilating distally, coxa 1 broader and shorter than coxa 2, with rounded anterior margin, with oblique row of spines on inner surface. Coxa 4 with deep excavation of more than half length of coxa, distal margin 2 times wider than proximal, with convex anterior margin and straight ventral margin. Coxa 5 bilobate, lobes subequal in size, posterodistal angle somewhat oblique, anterodistal angle circular. Coxa 6 significantly smaller than preceding one, also bilobate, posterior lobe longer and wider than anterior one, with three thin hairs posterodistally. Coxa 7 small, half as large as coxa 5, unilobate, with oblique ventral margin; hardly visible hairs located along posterior margin. Branchial vesicles on coxae 2–6, long, simple, without folds lacking accessory lobes. Oostegites present on coxae 2–5.

Gnathopod 1 smaller than gnathopod 2. Basis slightly shorter than coxal plate, widening distally, with setae on anterior margin and posterodistally; articles 3 and 4 short, with setae posterodistally; articles 4 to 6 covered with hairs along posterior margin; article 5 pyriform, devoid of lobe, longer than article 6, with distal setae; article 6 with parallel anterior and posterior margins, distal portion of posterior margin, bearing several long setae and tuft of long setae located near conjunction of dactyl; palm straight, serrated, with one pair of locking spines and two long setae; dactyl equal in length to palm, with proximal seta on anterior margin.

Basis of gnathopod 2 long, slightly longer than last 4 articles combined, somewhat widening distally, with setae on anterior margin and posterodistally; article 3 half as long as basis, dilated distally, bearing several setae on posterior margin; article 4 shorter than preceding one, trimmed with hairs and two setae on posterior margin; article 5 gradually widening distally, equal in length to article 3, trimmed with short thin hairs on anterior and posterior surfaces, anterior margin planted with long setae; article 6 spindle-shaped, pointed distally, nearly half as long as article 5, trimmed with short hairs practically all over the surface, with long setae along anterior and posterior margins; dactyl very small, hardly discernible, forming minute chela.

Pereopods 3 and 4 similar in shape, basis long, equal to three subsequent articles combined, widening distally, with several small hairs and setae in distal 1/3 of posterior margin; article 3 small, narrow; article 4 wider than article 3, anterodistal corner stretched into small lobe with one or two setae; article 5 shorter and narrower than article 4, in pereopod 3 slightly dilating distally, and in pereopod 4 having parallel margins; long setae located along posterior margin of articles 3–5; article 6 significantly longer than article 5, with parallel margins, small spinules on posterior margin, hairs anterodistally, locking spines thick and hook-like; dactyl pointed, short (in pereopod 3 less than 1/3 length of article 6, in pereopod 4 about half length).

Basis of pereopod 5 subcircular, its width equal to length, anterior margin set with spinules, posterior margin serrated and trimmed with hairs; article 3 subquadrate, with anterodistal seta; article 4 highly dilated, significantly longer than article 3, posterodistal lobe stretched beyond middle of article 5, margins armed with spinules; article 5 half as

wide as preceding one, with spinules postero-and anterodistally; article 6 narrower than and nearly two times longer than article 5, with parallel margins, spinules on anterior margin and posterodistal edge; dactyl more than half as long as article 6, narrow, pointed.

Basis of pereopod 6 oval with wide posterodistal lobe, with spines in distal 2/3 of anterior margin, posterior margin slightly serrated, bearing thin hairs; article 3 short and wide, with setae on anterior margin; article 4 highly dilated, its posterior margin convex, with two spinules, posterodistal lobe stretched to middle of article 5, anterior margin straight, armed with setae; article 5 half as long as, and half as wide as preceding one, slightly widening distally, with spinules on anterior margin and posterodistal edge; article 6 narrower and nearly two times as long as preceding one, with parallel margins, bearing few spinules and setae; dactyl same as in pereopod 5.

Basis of pereopod 7 wide, slightly dilating distally, length exceeding width, anterior margin furnished with spines in distal half, posterior margin convex, serrated, excavate distally, posteroventral corner rounded; article 3 stumpy with spine anterodistally; article 4 highly dilated, width subequal to length, posterodistal lobe stretched beyond half length of article 5, armed with spines on both margins; article 5 nearly half as long as and half as wide as preceding one, with distal spines; article 6 two times as long as and narrower than article 5, with parallel margins, bearing several spines and hairs; dactyl short, pointed, almost 1/3 as long as article 6.

Epimeron 1 slightly tapering distally, anterior margin slightly convex, posterior one slightly concave, depth of epimeron exceeding width. Epimeron 2 extended in length with slightly concave anterior margin; posterior margin convex; ventral margin slightly concave. Epimeron 3 highly dilated distally, anterodistal angle produced forward, posterodistal angle protruded to form broad upturned process.

Pleopods 1-3 similar in shape, peduncle diminishing in size from 1 to 3, distal end of peduncle of pleopod 2 bearing a pair of serrated coupling spines; pleopods 1 and 3 lack coupling spines; both rami bearing long setae.

Uropods 1-3 diminishing in size. Apices of rami of uropods 2 and 3 not extended beyond uropod 1. Peduncle of uropod 1 longer than rami; rows of spines located on both dorsal ridges; outer rami of uropods 1 and 2 slightly longer than inner and armed with several spines. Uropod 2 similar in shape to uropod 1, but peduncle subequal in length to outer ramus. Peduncle of uropod 3 shorter than rami, armed with distal spines; inner ramus shorter than outer one, with several spines along inner margin; outer ramus biarticulate, proximal article bearing two spines on distal end, distal article 1/4 as long as proximal article.

Telson long, narrow, fused basally nearly 1/3 of its length, each lobe with very thick apical spine and two dorsal spines.

Description of male paratype (4.0 mm)

Male different from female in a variety of characters. Urosomite 1 with deep dorsal depression followed by shorter and subcircular keel. Antenna 1 similar to female, but accessory flagellum biarticulate. Antennae 2 very long, approximately 4/5 of body length; peduncular articles 3, 4 and 5 thicker and longer than in female, articles 4 and 5 furnished with sensitive hairs on dorsal surface. Flagellum 41-articulate, articles increasing in length, trimmed with hairs. Gnathopod 1 with thicker article 6; all articles less setose, articles 4-6 devoid of minute hairs. Gnathopod 2, articles 5-6 more stumpy; article 5 inflated distally, with 'pad' of thin hairs on inner surface, outer surface practically bare; article 6 more widened, posterodistal edge produced forward forming chela with dactyl; dactyl larger, conspicuous; gnathopod 2 less setose as compared to female extremities. Basis of pereopod 7 narrower than in female with shorter and wider posteroventral corner and different shape

of posterodistal notch. Telson devoid of dorsal spines.

Remarks

In female *Orchomenella lukini* sp. nov. the armament of uropods 1–3 may vary in the number of spines increasing according to the age. *O. lukini* is closest to *Orchomenella pacifica* Gurjanova, 1938. They are similar particularly in keeled urosomite 1 and the basis of pereopod 7 in female. Besides, both species have no spines on the article 6 of pereopods 3 and 4. These species differ essentially in a variety of characters: the new species has a shorter lateral cephalic lobe; the antenna 2 of the male is devoid of calceoli, the article 1 of the primary flagellum of antenna 1 is not elongated; the epistome does not extend beyond the limit of labrum; the article 6 of gnathopod 1 has a transverse rather than oblique palmar margin; the gnathopod 2 is sexually dimorphic, though in *O. pacifica* it is not dimorphic; pereopods 5–7 have wider bases and shorter articles 4–7; the basis of pereopod 7 is sexually dimorphic, whereas monomorphic in *O. pacifica*; epimeron 3 has a wider tooth; uropods 1 and 2 have unequal rami, whereas equal in *O. pacifica*; the uropod 3 of the male lacks long plumose setae; telson is fused basally nearly 1/3 of its length.

The new species is similar to *Orchomenella japonica* Gurjanova, 1962 in the shape of uosome and gnathopod 1, but differs from it in the shape of head, epistome, antennae of both sexes, the article 5 of gnathopod 1 (in *O. japonica* it is short with a linguiform lobe), epimeron 3 (in *O. japonica* it has a straight posterior margin), uropods 1–3, and other characters.

The new species is similar particularly to *Orchomenella thomasi* Lowry and Stoddart, 1997 in having keeled urosomite 1 and distally excavated posterior margin of the basis of pereopod 7, but differs from it in the shape of the dorsodistal keel of urosomite 1, the shape of posterodistal notch on the basis of pereopod 7, posterodistally widened basis of pereopod 6, transverse palmar margin of the article 6 of gnathopod 1, the shape of gnathopod 2, the armament of the telson, and the shape of uropods 1–3.

The new species is easily discernible from other representatives of this genus by characters such as a notch on the basis of pereopod 7 and a transvers palmar margin of the article 6 of gnathopod 1.

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